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Probability measures in W* J-algebras in Hilbert spaces with conjugation

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Abstract

Let M be a real W*-algebra of J-real bounded operators containing no central summand of type I2 in a complex Hubert space H with conjugation J. Denote by P the quantum logic of all J-orthogonal projections in the von Neumann algebra N = M + iM. Let μ : P → [0,1] be a probability measure. It is shown that H contains a finite central summand and there exists a normal finite trace τ on N such that μ(p) = τ(p), p ∈ P. © 1998 American Mathematical Society.

Keywords

Hubert space, Measure, Quantum logics, W*-algebra